

**RECEIVED
CENTRAL FAX CENTER**

MAR 25 2005

**PATENT
YOR19960184US1
IBM 219**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	D.Y. Shih, et al.
Serial Number	:	09/254,769
Filing Date	:	March 11, 1999
Examiner	:	V. Nguyen
Group Art Unit	:	2829
For	:	WAFER SCALE HIGH DENSITY PROBE ASSEMBLY, APPARATUS FOR USE THEREOF AND METHODS OF FABRICATION THEREOF

Honorable Commissioner of Patents
and Trademarks
Post Office Box 1450
Alexandria, VA 22313-1450

Sir:

**PETITION TO WITHDRAW HOLDING OF ABANDONMENT PURSUANT TO
37 C.F.R. 1.181 or 37 C.F.R. 1.137(a)**

This is a petition to withdraw a holding of abandonment in the above-identified application. Applicants assert in this case that there was an inordinate delay in forwarding the amendment after final to the Examiner after it has been received by the Patent Office so that the statutory time period had elapsed by the time the Examiner issued his advisory action. It was Applicants' intent to have the Examiner consider the amendment after final and then discuss the claims with him between the date when the Advisory Action was issued and the end of the statutory period. Because the basis for the withdrawal of the holding of abandonment does not fit the usual reasons why such petitions are filed, Applicants are submitting this *Petition to*

Withdraw the Holding of Abandonment Pursuant to 37 C.F.R. § 1.181 or pursuant to 37 C.F.R. § 1.137(a) which relates to an abandonment which is based upon an unavoidable delay in the prosecution of this matter. The Examiner is respectfully requested to consider both bases for the petition and adopt the pertinent one to the exclusion of the other.

The pertinent facts in this case are as follows:

On April 8, 2004 the Patent Examiner responsible for the above-identified application sent out a final rejection in which, he stated that "Claim(s) 1 and 4 - 54 (*sic*) are pending in the application." The Examiner allowed claims "1, 4 - 7, 9 - 31, 33, 46 - 48 and 52 - 58" and rejected claims "8, 32, 35 - 45 and 49 - 51." The Examiner did not address pending claims 59 and 60 in the Official Action.

Applicants responded to the final rejection with an amendment in which they amended the rejected claims and argued the patentability of the claims over the references. The response was telefaxed to the USPTO on July 8, 2004 so that it was timely filed within the statutory three month period. A copy of the receipt is attached hereto as Exhibit 1.

On February 10, 2005, Applicants received the awaited *Advisory Action* some seven months after the amendment was filed, and four months after the six month period for response had elapsed. A copy of the *Advisory Action* is attached hereto as Exhibit 2.

Upon receipt of the *Advisory Action* Applicants immediately forwarded a "post advisory action amendment" in which they cancelled claims 34 - 45 and 50 - 51. In the "post advisory action amendment" they pointed out to the Examiner that a number of the rejections in the final rejection action were based solely on matters of form (e.g., improper dependency, etc...) and were not based substantively on cited prior art.

On March 18, 2005, Applicants' attorney received a Notice of Abandonment dated March 15, 2005. A copy of the Notice is attached hereto as Exhibit 3. A portion of the Examiner's basis for the rejection is confusing as he states that a reply was received on 10 February 2005 which is after the expiration period for reply...which expired on 08 July 2004. The total period for response expired on October 8, 2004.

REMARKS

Applicants are aware of the burdens that they must assume when an application is subjected to a "Final Rejection." Applicants are (and were at the time of filing their response to the final rejection) mindful of the extension of time policy as set forth in 37 CFR 1.136(a), and that they were given a shortened statutory period for reply to their final office action which was set to expire THREE MONTHS from the mailing date of the action. They also acknowledge that in the event a reply is filed within TWO MONTHS of the mailing date of the final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and that any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Applicants expected to receive an *Advisory Action* from the Examiner promptly after they transmitted Exhibit 1 to the Examiner. There were a number of claims that were allowed in the instant application. It was their intention after receipt of the Advisory Action to discuss the few non-allowed claims which were being rejected solely on procedural grounds. This was tantamount to requesting a reconsideration of the few rejected claims as the dependency of these claims had been changed and they should have been allowable since they were not being rejected on art. The rules clearly consider Applicants' plan to discuss the matter with the Examiner as proper since it clearly states that the statutory period for reply will expire six months from the date of mailing of the final action. Applicants intended to pay whatever extension fee was required after receipt of the Advisory Action.

Applicants further cite MPEP at 706.07 where it states:

"... and in reply to this (final) action the applicant should amend with a view to avoiding all the grounds of rejection and objection... While the rules no longer give to an applicant the right to 'amend as often as the examiner presents new references or reasons for rejection,' present practice does not sanction hasty and ill-considered final rejections. The applicant who is seeking to define his or her invention in claims that will give him or her the patent protection to which he or she is justly entitled should receive the cooperation of the examiner to that end, and not be prematurely cut off in the prosecution of his or her application... The examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal..."

The contact inventor employed by assignee was not available prior to the two month period, and thus Applicants could not file their response within the two month period. As noted, Applicants were willing to pay the extension of time fee after the expiration of the three month period. They expected that they would receive the Advisory Action within a month or so, and that they would be able to speak to the Examiner about how the claims were in condition for allowance, or could be placed into condition for allowance. Keep in mind that the independent claims had been allowed.

Applicants' attorney spoke with the Examiner and he stated that he did not receive the amendment filed on July 8, 2005 until February 7, 2005. This inordinate delay in routing the amendment to the Examiner for consideration should not be held to the detriment of Applicants as they did respond promptly within the three month period.

Applicants, in their intention to discuss the claims with the Examiner, also relied upon MPEP 714.13 which provides that an "amendment filed at any time after final rejection, but before an appeal brief is filed, may be entered upon or after filing of an appeal brief provided the total effect of the amendment is to (A) remove issues for appeal, and/or (B) adopt examiner suggestions." The amendment that Applicants filed after receipt of the Advisory Action was designed to remove issues for appeal and adopt the Examiner's suggestions. The majority of the

claims in the application are allowable; Applicants are merely seeking to obtain allowance of a few claims which were objected to and which were not rejected based upon art.

Applicants, by filing this petition herewith are taking appropriate and diligent action within the requisite two months of receipt of the Notice of Abandonment to promptly reinstate the above-identified application.

In view of the arguments presented herein, Applicants respectfully request that the holding of abandonment be withdrawn. Such favorable action is respectfully solicited.

In the event that the fact pattern does not warrant consideration of this matter under 37 C.F.R. §1.181, please consider this petition under the provisions of 37 C.F.R. §1.137(a) which relates to an abandonment which is based upon an unavoidable delay in the prosecution of this matter.

Assuming this provision is applicable, Applicants submit the amendment in response to the Advisory Action marked as Exhibit 4. It is requested that this amendment be forwarded to the Examiner for consideration.

Any petition fee which may be due as a result of this petition should be charged to Deposit Account 50-0510.

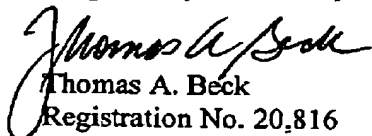
The factual pattern set forth above is hereby incorporated by reference herein to establish that the entire delay in filing the response to the advisory action was unavoidable and was in no way the result of any inactivity on the part of Applicants. There was a reasonable expectation on the part of Applicants, based upon current Patent Office practice relating to dispatching Advisory Action based upon final rejection actions, that an Advisory Action would have been received within at least three months of the receipt of the amendment. Applicants had no control over the intra-Patent Office mail and distribution systems which caused the Examiner to receive the amendment seven months after it was filed. Applicants should not be penalized as a result of the

Patent Office's inadvertent handling of this matter.

No terminal disclaimer is necessary in this case.

It is respectfully requested that Exhibit 4 be forwarded to the Examiner for his consideration and allowance of the claims.

Respectfully Submitted,



Thomas A. Beck

Registration No. 20,816

26 Rockledge Lane

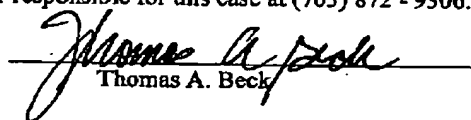
New Milford, CT 06776

Telephone (860) 354 - 0892

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being transmitted by facsimile on the date shown below to the United States Patent Office Examiner responsible for this case at (703) 872 - 9306.

March 25, 2005


Thomas A. Beck

USPTO
 TO: Auto-reply fax to 860 772 2004 4:34 PM PAGE 1/001
 210 0700 COMPANY: Server

Auto-Reply Facsimile Transmission



TO: Fax Sender at 860 210 0700
 Fax Information
 Date Received: 7/8/2004 4:28:50 PM [Eastern Daylight Time]
 Total Pages: 16 (including cover page)

ADVISORY: This is an automatically generated return receipt confirmation of the facsimile transmission received by the Office. Please check to make sure that the number of pages listed as received in Total Pages above matches what was intended to be sent. Applicants are advised to retain this receipt in the unlikely event that proof of this facsimile transmission is necessary. Applicants are also advised to use the certificate of facsimile transmission procedures set forth in 37 CFR 1.8(a) and (b), 37 CFR 1.6(f). Trademark Applicants, also see the Trademark Manual of Examining Procedure (TMEP) section 306 et seq.

Received
 Cover
 Page

=====>

Jul 08 2004 4:17PM Law Offices of Thomas R. (860) 210-0700 P. 1

YOR19940184 PATENT
 IBM-319

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : D.T.Sch, et al.
 Serial Number : 09/254,769
 Filing Date : March 11, 1999
 Examiner : V. Nguyen
 Group Art Unit : 2F29
 For : WAFER SCALE HIGH DENSITY
 PHORE ASSEMBLY,
 APPARATUS FOR USE THEREOF
 AND METHODS OF
 FABRICATION THEREOF

Honorable Commissioner of Patents
 and Trademarks
 Post Office Box 1450
 Alexandria, VA 22313-1450

Sir:

In response to the Official Action dated April 8, 2004, please consider the following remarks with respect to the above-identified application as follows:

REMARKS

Applicants have amended the form of claims 4 and 32 to reflect proper dependency. The objection as to improper "antecedent basis" with respect to claims 36 and 49 has been corrected.

In answer to the Examiner's objection as to claim 60, said claim is merely claiming a plurality (i.e., more than one) of the structures defined in, for example, claim 1.

2004-07-08 10:17:00 AM FAXED TO: 860-210-0700 FROM: 860-210-0700 FAXED BY: 860-210-0700

EXHIBIT 1



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/254,769	03/11/1999	BRIAN SAMUEL BEAMAN	YO996-184N	7568

7590 02/07/2005
THOMAS A. BECK, ESQ.
26 Rockledge Lane
New Milford, CT 06776

EXAMINER
NGUYEN, VINH P

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EXHIBIT 2

PTO-90C (Rev. 10/03)

Advisory Action **Before the Filing of an Appeal Brief**

Application No.

09/254,769

Applicant(s)

BEAMAN ET AL

Examiner

VINH P. NGUYEN

Art Unit

2829

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 08 July 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 705.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The reply was filed after the date of filing a Notice of Appeal, but prior to the date of filing an appeal brief. The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because:
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: 1, 4-7, 9-31, 33, 46-48 and 52-58
Claim(s) objected to: _____
Claim(s) rejected: 8, 32, 34-45, 49-51
Claim(s) withdrawn from consideration: _____

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____

VINH P. NGUYEN
Primary Examiner
Art Unit: 2829

02/03/05

Continuation Sheet (PTOL-303)

Application No.

Continuation of 3. NOTE: the proposed changes in claims 34 and 50 appears to raise new issues that requires further consideration and/or search.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/254,769	03/11/1999	BRIAN SAMUEL BEAMAN	YO996-184N	7568

7590

03/15/2005

THOMAS A. BECK, ESQ.
26 Rockledge Lane
New Milford, CT 06776

EXAMINER

NGUYEN, VINH P

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EXHIBIT 3

Notice of Abandonment

Application No.

09/254,769

Examiner

VINH P. NGUYEN

Applicant(s)

BEAMAN ET AL.


Art Unit

2829

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address—

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 07 February 2005.
 - (a) ☒ A reply was received on 10 February 2005 (with a Certificate of Mailing or Transmission dated 10 February 2005), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on 08 July 2004.
 - (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
 - (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) ☐ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) ☐ The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☐ The reason(s) below:


VINH P NGUYEN
Primary Examiner
Art Unit 2829A
03/29/05

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

U.S. Patent and Trademark Office
PTOL-1432 (Rev. 04-01)

Notice of Abandonment

Part of Paper No. 0305

USPTO 2/10/2005 11:48 AM PAGE 1/001 Fax Server
 TO: Auto-reply fax to 860 210 0700 COMPANY:

Auto-Reply Facsimile Transmission



TO: Fax Sender at 860 210 0700

Fax Information
 Date Received: 2/10/2005 11:43:22 AM [Eastern Standard Time]
 Total Pages: 16 (including cover page)

ADVISORY: This is an automatically generated return receipt confirmation of the facsimile transmission received by the Office. Please check to make sure that the number of pages listed as received in Total Pages above matches what was intended to be sent. Applicants are advised to retain this receipt in the unlikely event that proof of this facsimile transmission is necessary. Applicants are also advised to use the certificate of facsimile transmission procedures set forth in 37 CFR 1.8(a) and (b), 37 CFR 1.6(f). Trademark Applicants, also see the Trademark Manual of Examining Procedure (TMEP) section 306 et seq.

Received
 Cover
 Page

=====>

Feb 10 2005 11:44AM Law Offices of Thomas R. (860) 210-0700 P.1	
PATENT YURIY960184N IBM-219	
<u>IN THE UNITED STATES PATENT AND TRADEMARK OFFICE</u>	
In re Application of	: D.Y.S.H. et al.
Serial Number	: 06254,769
Filing Date	: March 11, 1999
Examiner	: V. Nguyen
Group Art Unit	: 2829
For	: WAFER SCALE HIGH DENSITY PROBE ASSEMBLY APPARATUS FOR USE THEREFOR AND METHODS OF FABRICATION THEREOF
Honorable Commissioner of Patents and Trademarks Post Office Box 1450 Alexandria, VA 22313-1450	
Sir:	
In response to the Official Action dated February 7, 2005, please amend the above-identified application as follows:	
IN THE CLAIMS:	
Cancel Claims 34-45, 50-51.	
REMARKS	
The Examiner is requested to reconsider his rejection of Claims 8 and 32. To the Official Action dated April 8, 2004, the Examiner rejected Claims 8 and 32 under 35 USC 112, second	
-1-	

EXHIBIT 4

**RECEIVED
CENTRAL FAX CENTER**

MAR 25 2005

**PATENT
YOR19960184N IBM-219**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	D.Y. Shih, et al.
Serial Number	:	09/254,769
Filing Date	:	March 11, 1999
Examiner	:	V. Nguyen
Group Art Unit	:	2829
For	:	WAFER SCALE HIGH DENSITY PROBE ASSEMBLY, APPARATUS FOR USE THEREOF AND METHODS OF FABRICATION THEREOF

Honorable Commissioner of Patents
and Trademarks
Post Office Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Official Action dated February 7, 2005, please amend the above-identified application as follows:

IN THE CLAIMS:

Cancel Claims 34-45, 50-51.

REMARKS

The Examiner is requested to reconsider his rejection of Claims 8 and 32. In the Official Action dated April 8, 2004, the Examiner rejected Claims 8 and 32 under 35 USC 112, second paragraph, with the specific rejection being that "it appears that the dependency

of this claim is improper because this claim depends on a cancelled Claim 3. This claim should be dependent on Claim 1. There were no other bases of rejection cited for these two claims with respect to anticipation or obviousness. Applicants amended the form of claims 8 and 32 to reflect the proper dependency on Claim 1.

The objection as to improper "antecedent basis" with respect to claim 49 was also corrected in Applicants' prior response. Again there was no rejection of this claim in view of art. The rejection was solely a 112 rejection. The objection was cured by rewording of the dependency.

In answer to the Examiner's objection as to claim 60, said claim is merely claiming a plurality (i.e., more than one) of the structures defined in, for example, claim 1. The term "array" means an orderly grouping or arrangement. The present invention relates to a method for making an inter-connector to couple an electric module to a circuit board. The invention provides a probe structure that is an integral part of the fan-out wiring on the test substrate or other printed wiring means to minimize the electrical conductor length as well as contact resistance of the probe interface. The probe is provided with a compliant interface to compensate for slight variations in the rigid bond pad heights on the IC device and variations in the height of the probe contacts. The object in Claim 60 is to cover an electronic system wherein more than one assembly is used to test an item.

A "probe" is defined as "a pointed metal tip used for making electrical contact with a circuit element being checked." [*Webster's Ninth Collegiate Dictionary* (1983) page 937.] The present invention is directed to structures useful as probes for testing of electrical interconnections to integrated circuit devices and other electronic components. Referring to Figures 1 and 2, for example, the probe (10) comprising the connecting elements 13, 14, 15 and 16 between the test substrate (11) and the integrated circuit device (30). Any of the drawings e.g. Figures 1, 2, 4, 5-7, 10, 12, 14, 15, etc., which depict the connecting elements illustrate the "probes." This description of the term "probe" is consistent with the text in the specification found on page 14, lines 1-7. The drawings cited are relevant as they depict a "plurality" (i.e., more than one) of

probes.

The "plurality of probes" is depicted also in Figure 14 as comprising elements 13, 14, 15 and 16. These drawing is pertinent as it depicts a "plurality" (i.e., more than one) probe.

In view of the interpretation normally attributed to the words "plurality" and "array," one could assert that the use of both terms is redundant. For that reason reference to "array" has been deleted.

The balance of the rejected claims has been canceled.


Applicants' attorney has attempted to explain the allowability of unallowed claims 8, 32, 49 and 60. As noted previously, these claims are not rejected on art asserting anticipation or obviousness. They have been rejected solely on matters of form. If the Examiner believes that Applicants' attorney is in error with respect to his contentions as to these five claims, Applicants' attorney would be willing to discuss the matter with the Examiner by telephone at a mutually convenient time. This amendment is submitted in good faith and not for purposes of delay.

Applicants are responding promptly to the Examiner's Advisory Action within the one month period allowed to enable the Examiner to consider Applicants' comments as to Claims 8, 32, 49 and 60 before cancelling these claims. Applicants point out that they have denoted the status of Claims 8, 32, 49 and 60 as "Currently Amended" since the Examiner did not enter the previously filed amendment so these claims are not "Previously Presented."

Applicants are canceling the claims herein without prejudice and with the express reservation that they can file a continuation application on these canceled claims.

In view of the arguments and modifications to the claims, allowance of this case is warranted.
Such favorable action is respectfully solicited.

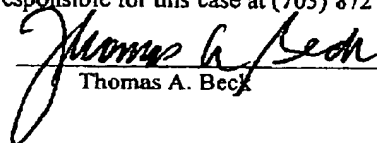
Respectfully Submitted,


Thomas A. Beck
Registration No. 20,816
26 Rockledge Lane
New Milford, CT 06776
Telephone (860) 354 - 0892

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being transmitted by facsimile on the date shown below to the United States Patent Office Examiner responsible for this case at (703) 872 - 9306.

February 10, 2005


Thomas A. Beck

IN THE CLAIMS:

- Claim 1 (Previously presented) A structure comprising:
 - a substrate having a surface;
 - a plurality of bond wire elongated electrical conductors extending away from said surface;
 - each of said bond wire elongated electrical conductors having a first end affixed to said surface at an electrical contact location and a second end projecting away from said surface;
 - there being a plurality of said second ends;
 - said first end and said second end of said bond wire elongated electrical connector having a ball-shaped protuberance positioned thereon;
 - means for permitting each of said plurality of said second ends to move about reference positions;
 - wherein said means for permitting each of said plurality of second ends to move about reference positions is a sheet of material having a plurality of through-holes therein through which said second ends project, there being a perforation in each said sheet in the vicinity of said openings. —
- Claims 2- 3 (Cancelled)
- Claim 4. (Previously presented) The structure according to claim 1 wherein said perforation comprises a plurality of independent perforations about each of said through hole.-
- Claim 5. (Previously presented) The structure according to claim 1 wherein said perforation comprises a plurality of independent perforations about at least a part of said plurality of through-holes. —
- Claim 6. (Previously presented) The structure according to claim 1 wherein said perforation is a portion coupled to an adjacent through-hole. —
- Claim 7. (Previously presented) The structure according to claim 1 wherein said perforation is adjacent to a plurality of said through-holes. —

– Claim 8. (Currently Amended) The structure according to claim 3 1 wherein said perforations form a cantilevered flap about at least one of said through-holes. –

– Claim 9. (Previously presented) The structure according to claim 1 wherein a plurality of said perforations form cantilevered flaps about more than one of said through-holes –

– Claim 10. (Previously presented) The structure according to claim 1 wherein at said second end there is disposed a structure selected from the group consisting of a protuberance and a sharp. –

– Claim 11. (Previously presented) The structure according to claim 3 1 wherein at said second end there is disposed a structure selected from the group consisting of a protuberance and a sharp. –

--Claim 12. (Previously presented) The structure according to claim 1 wherein said sheet comprises a sheet of electrically conductive material having a plurality of through holes therein, said sheet of material contains a dielectric material to provide a means for preventing said elongated electrical conductors from electrically contacting said sheet of electrically conductive material. –

--Claim 13. (Previously presented) The structure according to claim 1 wherein said sheet is spaced apart from said surface by a flexible support.

--Claim 14. (Previously presented) The structure according to claim 13 wherein said flexible support is selected from the group consisting of a spring and an elastomeric material.

--Claim 15. (Previously presented) The structure according to claim 1 wherein said elongated electrical conductors have a shape selected from the group consisting of linear piece-wise linear, curved and combinations thereof.

--Claim 16. (Previously presented) The structure according to claim 13 wherein said sheet and said flexible support form a space containing said plurality of elongated electrical conductors

--Claim 17. (Previously presented) The structure according to claim 16 wherein said space is filled with a flexible material.

--Claim 18. (Previously presented) The structure according to claim 17 wherein said flexible material is an elastomeric material.

--Claim 19. (Previously presented) The structure according to claim 12 wherein said sheet has a top surface and a bottom surface and said through holes have a sidewall, said dielectric material coats said top surface and said bottom surface and said sidewall.

--Claim 20. (Previously presented) A structure according to claim 1 wherein said plurality of elongated electrical conductors are distributed into a plurality of groups.

--Claim 21 (Previously presented) The structure according to claim 20 wherein said plurality of groups are arranged in an array.

--Claim 22. (Previously presented) The structure according to claim 1 wherein said structure is a probe for an electronic device.

--Claim 23. (Previously presented) The structure according to claim 22 wherein said electronic device is selected from the group consisting of an integrated circuit and a packaging substrate.

--Claim 24. (Previously presented) The structure according to claim 21 wherein each of said groups corresponds to an integrated circuit chip on a substrate containing a plurality of said integrated circuit chips.

--Claim 25. (Previously presented) The structure according to claim 24 wherein said substrate containing said plurality of integrated circuit chips is a wafer of said integrated circuit chips.

--Claim 26. (Previously presented) An apparatus for using said structure of claim 1 to test an electronic device comprising:
means for holding said structure of claim 1;
means for retractable moving said structure of claim 1 towards and away from said electronic device so that said second ends contact electrical contact locations on said electronic device; and
means for applying electrical signals to said elongated electrical conductors.

--Claim 27. (Previously presented) A structure according to claim 10 wherein said protuberance is spherelike.

--Claim 28. (Previously presented) The structure according to claim 1 wherein said sheet comprises a sheet of electrically conductive material having a plurality of through holes therein, and a sheet of dielectric material having a plurality of second through holes therein, said first through holes are aligned with said second through holes, said first through holes have a smaller diameter than said second through holes to provide a means for preventing said elongated electrical conductors from electrically contacting said sheet of electrically conductive material. –

--Claim 29. (Previously presented) The structure according to claim 28 wherein said sheet of electrically conductive material has a first side and a second side, said sheet of dielectric material is disposed on either of said first side and said second side of said sheet of electrically conductive material.

--Claim 30. (Previously presented) The structure according to claim 29 where there is disposed on said first side and said second side of said sheet of electrically conductive material, a layer of said dielectric material.

--Claim 31. (Previously presented) The structure according to claim 1 wherein said sheet comprises a sheet of rigid material having a plurality of through holes therein, said sheet contains a dielectric material to provide a means for preventing said elongated electrical conductors from electrically contacting said sheet of electrically conductive material. —

--Claim 32. (Currently amended) ~~A~~ The structure according to claim ~~3~~ 1 wherein said sheet comprises a sheet of dielectric material having a plurality of through holes therein, said sheet contains a sheet of rigid material disposed in contact with said sheet of dielectric material, said sheet of rigid material has an opening therein exposing a plurality of said through holes to provide means for support of said dielectric material.

--Claim 33. (Previously presented) The structure according to claim 31 wherein said sheet is spaced apart from said surface by a flexible support, said sheet of rigid material is disposed on said flexible support.

Claim 34 (Canceled) An apparatus for making electrical contact with a plurality of bond pads on an integrated circuit device comprising:
an integrated cantilevered compliant test probe comprising:
a first fanout substrate having a first surface;
said first surface having a plurality of contact locations;
a plurality of ball bonds attached to said plurality of contact locations;
a plurality of free-standing wires extending outward from said ball bonds away from said first surface on said fan out substrate;
a plurality of ball shaped contacts on the ends of said plurality of wires;
a cantilevered flap means for controlling the direction and length of each of said plurality of ball shaped contacts to move about corresponding reference positions, the configuration of elements of said apparatus being such that the movement of said wires is always in the same direction with continuous contact at said contact locations.

--Claim 35. (Canceled) The apparatus according to claim 34 wherein said fan out substrate type comprises:
multilayer ceramic substrates with thick film wiring;
multilayer ceramic substrates with thin film wiring;
metallized ceramic substrates with thin film wiring;
epoxy glass laminate substrates with copper wiring;
silicon substrates with thin film wiring.

--Claim 36. (Canceled) The apparatus according to claim 34 further including a preformed frame of foamed elastomer material surrounding clusters groupings or arrays of said probes.

--Claim 37 (Canceled) The apparatus according to claim 36 further including a layer of elastomer material surrounding said probes in said cluster.

--Claim 38. (Canceled) The apparatus according to claim 37 further including a sheet of Invar material that has a thin coating of a polymer material and a plurality of openings corresponding to said plurality of ball shaped contacts.

--Claim 39. (Canceled) The apparatus according to claim 37 further including a sheet of Invar material with a plurality of large diameter openings corresponding to said plurality of ball shaped contacts.

--Claim 40. (Canceled) The apparatus according to claim 37 further including a sheet of polymer material with a plurality of small diameter openings corresponding to said plurality of ball shaped contacts placed on top of said sheet of Invar material.

--Claim 41. (Canceled) The apparatus according to claim 37 further including a sheet of polymer material with a plurality of small diameter openings corresponding to said plurality of ball shaped contacts.

--Claim 42. (Canceled) The apparatus according to claim 41 further including a frame attached to said sheet of polymer material with said plurality of openings corresponding to said plurality of ball shaped contacts.

--Claim 43. (Canceled) The apparatus according to claim 38 further including a thick frame of Invar material attached to said sheet of Invar material with said thin coating of a polymer material and said plurality of openings corresponding to said plurality of ball shaped contacts.

--Claim 44. (Canceled) The apparatus according to claim further including a plurality of probes arrays corresponding to the location of a plurality of IC devices on a wafer.

--Claim 45. (Canceled) The apparatus according to claim 36, further including a sheet of Invar material that has a thin coating of polymer material and a plurality of openings corresponding to said plurality of ball shaped contacts.

--Claim 46. (Previously presented) A method comprising:
providing a substrate having a surface;
forming a plurality of bond wire elongated electrical conductors extending away from said surface;
each of said bond wire elongated electrical conductors having a first end affixed to said surface at an electrical contact location and a second end projecting away from said surface;
there being a plurality of said second ends;
said first end and said second end of said bond wire elongated electrical connector having a ball-shaped protuberance positioned thereon;
providing means for permitting each of said plurality of said second ends to move about reference positions;
wherein said means for permitting each of said plurality of second ends to move about reference positions is a sheet of material having a plurality of through-holes therein through which said second ends project, there being a perforation in each said sheet in the vicinity of said openings. —

--Claim 47. (Previously presented) The structure according to claim 1 wherein said sheet is formed from a material selected from the group consisting of Invar, Cu/Invar/Cu, molybdenum, polyimides.

--Claim 48. (Previously presented) The structure according to claim 1 wherein said sheet is formed from a material selected from the group consisting of metal, a polymer, semiconductor and dielectric.

--Claim 49. (Currently amended) The structure according to claim ~~42~~ 48 wherein said dielectric is selected from the group consisting of a ceramic and a glass.

--Claim 50. (Canceled) An apparatus for making electrical contact with a plurality of aluminum bond pads on an integrated circuit device comprising:
an integrated cantilevered compliant test probe comprising:
a first fan-out substrate having a first surface;
said first surface having a plurality of contact locations;
a plurality of ball bonds attached to said plurality of contact locations;
a plurality of free standing wires extending outward from said ball bonds, away from said first surface on said fan-out substrate;
a plurality of ball shaped contacts on the ends of said plurality of wires;
cantilevered flap means for controlling the direction and length of each of said plurality of ball shaped contacts to move about corresponding reference positions, the configuration of elements of said apparatus being such that the movement of said wires is always in the same direction with continuous contact at said contact locations.

--Claim 51. (Canceled) The apparatus according to claim 50 wherein said fan-out substrate type is selected from the group consisting of:
multilayer ceramic substrates with thick film wiring;
multilayer ceramic substrates with thin film wiring;
metallized ceramic substrates with thin film wiring;
epoxy glass laminate substrates with copper wiring;
silicon substrates with thin film wiring.

Claim 52. (Previously presented) The structure according to claim 1, further including a layer of elastomer material surrounding said ball shaped protuberances positioned at said first end of said bond wire elongated electrical conductors and a substantial portion of said bond wire elongated electrical conductors.

Claim 53. (Previously presented) The structure according to claim 9, wherein said means for permitting each of said plurality of second ends to move about reference positions is a sheet of polymer material with a plurality of cantilever flaps and openings corresponding to said plurality of said second end ball-shaped protuberances.

Claim 54. (Previously presented) The structure according to claim 53, further including an epoxy material used to bond the plurality of ball shaped protuberances to the corresponding openings in said cantilever flaps.

Claim 55. (Previously presented) The structure according to claim 5 wherein the action of mating said plurality of said second end ball-shaped protuberances to a plurality of flat or recessed contacts on an IC device causes said plurality of second end ball shape protuberances to wipe against said IC contacts.

Claim 56. (Previously presented) The structure according to claim 1, further including a plurality of cylindrical collars concentrically located on the plurality of probe wires and positioned between the top surface of said elastomer material and said second end ball shape protuberances on the end of said probe wires.

Claim 57. (Previously presented) The structure according to claim 9, wherein said means for permitting each of said plurality of second ends to move about reference positions is a sheet of polymer material with a plurality of openings corresponding to a plurality of cylindrical collars concentrically located on a plurality of probe wires.

Claim 58. (Previously presented) The structure according to claim 1, further including a plurality of probe arrays corresponding to the location of a plurality of IC devices on a wafer.

Claim 59. (Cancelled) A structure according to claim 3, wherein said means for permitting is a sheet of material having a plurality of openings therein through which said second ends project

Claim 60. (Currently amended) A The structure according to claim 46, further including a plurality of probes ~~arrays~~ corresponding to the location of a plurality of IC devices on a wafer.